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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,033	08/16/2006	Changling Liu	034226 M 003	9375
441 7590 04/08/2009 SMITH, GAMBRELL & RUSSELL 1130 CONNECTICUT AVENUE, N.W., SUITE 1130 WASHINGTON, DC 20036				
EXAMINER ZAREK, PAUL E				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/598,033

## Applicant(s)

LIU ET AL.

## Examiner

Paul Zarek

## Art Unit

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CI/CD)  
Paper No(s)/Mail Date 02/06/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of the Claims***

1. Claims 10-18 have been added, and Claims 1-9 have been cancelled by the Applicant in correspondence filed on 02/06/2009. Claims 10-18 are currently pending. This is the second Office Action on the merits of the claim(s).

### ***Election/Restrictions***

2. Newly submitted claims 16-18 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are drawn to methods of using or making the compounds of Claim 10. These claims correspond to Claims 6 (method of making), 8, and 9 (both method of using) of the originally presented claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, Claims 16-18 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

3. Examiner notes that newly presented Claims 10-15 correspond to Claims 1-5 and 7, respectively, as originally filed. The only difference being the newly presented claims are all within the scope of the elected Group II (A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub> are C, X<sub>1</sub> is CH, X<sub>2</sub> is O or S, and X<sub>3</sub> is NR<sub>8</sub>). Claims 10-15 are examined herein.

## **RESPONSE TO ARGUMENTS**

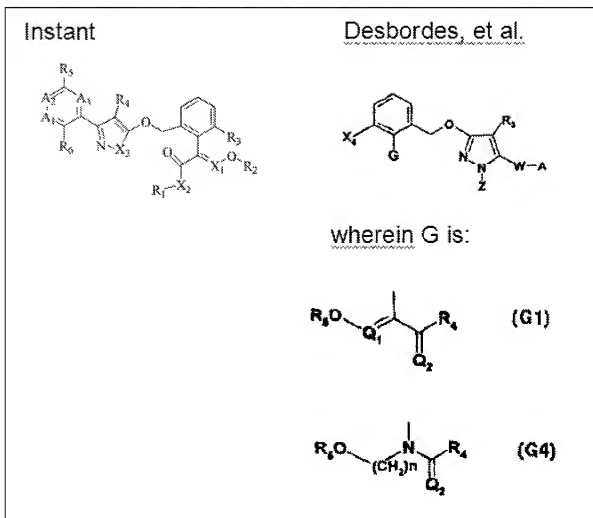
4. Examiner notes that Applicants have perfected their claim for the benefit of prior-filed international application PCT/CN05/00195. Thus, the effective filing date of the instant application is 02/17/2005. The right of foreign priority of the instant application is 02/20/2004.
5. Examiner notes submission of foreign patents in IDS filed on 02/06/2009. They have been considered, and have been indicated as such on 1449 form attached to this Office Action.
6. Claims 1-5, and 7 were rejected under 35 U.S.C. 102(b) as being anticipated by Liu, et al. (Chinese Patent Application No. 200410021172.3, 2005). This rejection is mooot in light of Applicants' cancellation of Claims 1-5 and 7.
7. Claims 1-5 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Desbordes, et al. (International Application No. WO99/33812, 1999). This rejection is is mooot in light of Applicants' cancellation of Claims 1-5 and 7.

***Claim Rejections - 35 USC § 103***

8. The text of Title 35, U.S.C. § 103 not included in this action can be found in a prior Office action.
9. Claims 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desbordes, et al. (International Application No. WO99/33812, 1999, already of record).
10. Newly added Claim 10 of the instant application is drawn to a substituted azole compound of formula I comprising the substituents A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub>, X<sub>1</sub>, X<sub>2</sub>, and X<sub>3</sub>. Claims 11-14 further limit the identities of the above-mentioned substituents. Compound 2 is the elected species, wherein R<sub>1</sub> and R<sub>2</sub> are -CH<sub>3</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is -H, X<sub>1</sub> is -CH-, X<sub>2</sub> is =O, X<sub>3</sub> is -NCH<sub>3</sub>, A<sub>1</sub> and A<sub>3</sub> are -CH-, and A<sub>2</sub> is -CCl. Claim 15 is

drawn to a composition comprising the azole compound of formula I as an active ingredient wherein the weight percentage of the active ingredient is from 0.1% to 99%.

11. Desbordes, et al., teach numerous substituted azole compositions which possess fungicidal abilities (abstract). Although Desbordes, et al., does not teach the specific species elected by Applicant, it teaches numerous compounds that individually and as a group render the elected species obvious. The generic formulae are shown below:



12. Desbordes, et al., disclose compounds 100 and 103 (pg 47), wherein W is a bond and the G is G1. Compounds 100 and 103 differ from the elected species in that the phenyl ring (A) is

either 2-cyanophenyl or 2-fluorophenyl, respectively, rather than 4-chlorophenyl. King teaches that all halogens and -CN are bioisosteres of each other (pg 208, Table 2). Positional isomers are expected to possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). (MPEP §2144.09(II)) Desbordes, et al., also discloses compounds 50, 65, 70, and 88, wherein W is a bond and the G is G4. In this case, the disclosed compounds differ from the elected species in that G4 contains a trivalent nitrogen, and that the phenyl ring (A) is either 4-chlorophenyl (compound 50), 4-trifluoromethylphenyl (compound 65), 4-fluorophenyl (compound 70), or 4-cyanophenyl (compound 88). In this case, not only are -CN and the halogens bioisosteres, King also teaches the equivalence of trivalent nitrogens and trivalent carbons (pg 208, Table 1). Desbordes, et al., tests substituted azoles, including compounds 50, 65, 70, and 88, for their fungicidal activity against various fungi. In each case, the substituted azole, as the active ingredient, comprised approximately 50% of the composition (60 mg azole in 60 mL aqueous solution) (Examples B1-B6). Given that Desbordes, et al., teach that numerous substituted azole compounds which are very similar to the elected species, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make the elected species based upon the compound taught by Desbordes, et al. This rejection was applied to cancelled Claims 1-5 and 7, and is applied to Claims 10-15 for the same reasons.

13. Applicants traversed the rejection of Claims 1-5 and 7 (which correspond to newly added Claims 10-15, respectively) on the grounds that the compounds and compositions of Desbordes, et al., do not fairly suggest the instantly claimed compounds. Specifically, the fact that: i) the instantly claimed compounds are positional isomers with respect to the pyrazole core compared to those disclosed in Desbordes, et al.; ii) the substitution of halogens and -CN would result in

changes to the resultant compound; and, iii) the synthesis of the compounds in Desbordes, et al., require markedly distinct and nonobvious starting materials. The Examiner respectfully disagrees.

14. The MPEP clearly indicates that positional isomers are *prima facie* obvious over each other (MPEP §2144.09(II)). While positional isomers may yield unpredictable differences in their bioactivity, the fact is that such discrepancies are would unanticipated. A skilled artisan would expect that merely altering the position of the subgroups around the pyrazole core would expect the resultant compounds to maintain their pesticidal effect.

15. Applicants assert that King teaches away from bioisosteres by referencing passages within King that caution the artisan about what may happen when one atom or group is replaced by a well-known bioisostere. Examiner notes that King explicitly indicates that the potency of the new molecule is unlikely to be affected (pg 207, paragraph 3). That changes in selectivity, toxicity and metabolic stability could be expected does not *ipso facto* mean that a skilled artisan would reasonably expect that a bioisostere would be ineffective. Rather, the skilled artisan would recognize that changing one atom or group for its commonly-accepted bioisostere would be considered routine optimization to obtain a better active agent.

16. Desbordes, et al., disclose a few synthesis methods to manufacture the compounds disclosed therein. Method B and C utilize starting compounds that would enable one of ordinary skill in the art to obtain the compounds disclosed in the instant application.

17. Therefore, the compounds and compositions disclosed in Desbordes, et al., are *prima facie* obvious over those of the instant application.

***Conclusion***

18. Claims 10-15 are rejected
19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Zarek whose telephone number is (571) 270-5754. The examiner can normally be reached on Monday-Thursday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PEZ

/Rita J. Desai/  
Primary Examiner, Art Unit 1625